131 Habitat.- Deltoid-shaped wedge of territory
●133 claimed by Tübatulabal and Palagewan (fig. 1) consisted roughly of natural drainage area of Kern r. and its tributaries from river's source near Mt. Whitney to w. end of Kern canyon 14 mi. NE of Bakersfield; this area comprises some 1300 sq. mi., and is mainly mountainous with elevation between 2500-14500 ft. The n. 2 3 of area lies in high Sierras, with many mt. meadows
[312] and numerous peaks of 6000 ft. and more; it is well-watered, both Kern and South Fork of Kern being perennial streams, flowing southward at bottom of deep narrow canyons in parallel courses 20 mi. apart. Lawson gives 2 excellent views of canyon of unaugmented Kern and Little Kern plateau, showing character of region (Lawson, pl. 41a, b).

133 In s. third of area (fig. 1) mountainous character of country continues save for 3 narrow valleys, each drained by a stream, which ray out N-NE, E-NE, S-SW from common flood plain at confluence of unaugmented Kern and South Fork of Kern r. The n. valley is that of Kern r.; this flood-plain valley extends N, strewn with boulders and gravel, up unaugmented Kern for distance of 10 mi. from confluence, its breadth diminishing from 1 1/2 mi. to few hundred feet. The e. valley, that of South Fork of Kern r., extends E from confluence for 15 mi., with width in its
[134] lower part of more than one mile. In this valley, flood-plain silts and sands mantle stream gravel in large part and make agricultural land. The s. valley, or Hot Springs valley, is a little over 4 mi. long and about 1 mi. wide; it is divided longitudinally into 2 parts by low median ridge of
[312] granitic rock. On e. side of this ridge is flat-bottomed alluviated plain from 1 2-3 4 mi. wide; in this plain are situated several hot springs. On w. side of median ridge in Hot Springs valley is tortuous channel of Kern r.; stream enters this rocky channel through streamworn notch in n. end of median ridge immediately at junction of South Fork and Kern r. Alluvium which forms floor of Hot Springs valley derived from 3 incoming streams, largest of which is Erskine creek which enters valley at s.e. corner and there builds up notable fan which spreads out over its entire width. Second stream is Vaughn creek which centers at s. end and gives rise to less important fan which is confluent with that of Erskine creek; smallest creek is that which drains an incipient canyon in face of steep mt. slope which bounds valley on e. side between Erskine creek and South Fork of Kern r. (Lawson, 399). Lawson gives several photographs of Hot Springs valley and excellent view looking up South Fork valley from confluence of South Fork and Kern r. (Lawson, pls. 39a, b, 40a, b).

133 Near s. end of Hot Springs valley Kern r. enters precipitous gorge through which river rushes over huge boulders, creating continuous rapids for its 25-mi. course through gorge. There are no outstanding cataracts or falls in

●133 river as it flows through gorge, but from e. mouth of gorge for 60 mi. downstream there is drop of 50 ft. per mi. in river's course. There are 2 periods of high water in Kern r.; one during winter rain-flood from Jan.-March, second during summer snow-flood, from May-July; lowest water occurs in October (Gifford and Schenck, 17). Minimum flow of Kern in dry season 2700-3000 cu. ft. per second, in season greatest capacity over 19000 cu. ft. per second (Pen Pictures, 248).

133 Three valleys lie at 2500-3000 ft. elevation.
132 They are in a climatic province which is semi-arid, with mesothermal temperature and summer deficiency of rainfall (Thornthwaite, pl. 3). Temperatures from 110-115° F. not uncommon in July-August; winters not severe, but generally some snow falls in valleys, more on foothills, and there are always heavy snows in mts. Precipitation records for Kernville, in Kern valley, are:

Year	Rainfall (in inches)	No rainfall
1924	6.48	May-September (inclusive)
1925	7.43	September
1926	11.66	June-September (inclusive)
1927	10.37	May-September (inclusive)
1928	6.47	June-September (inclusive)
1929	5.04	July, Aug., Oct.-Dec.
1930	6.97 plus 19 in. snow	June-October (inclusive)
1931	9.92	May, September
1932	7.34	July-November (inclusive)

[312] Previous to white settlement and diversion of water for agriculture, South Fork valley contained 2 large lakes, W of Onyx, NW of Weldon on Jesus ranch (SM). In 1776 Garcés, writing of unaugmented Kern near Kernville, says, "On this [175] famous river, which I named Rio de San Felipe, there are abundant pastures, famous woods, and much irrigated ground (tierra de regadio)" (Garcés, 282). In foothills which enclose valleys are numerous hot and cold springs and intermittently flowing streams.

137 Vegetation of 3 valleys and lower foothill regions mixed; Shantz and Zon include valleys in chaparral area; my botanical collections from valley-foothill region contain specimens from desert, foothill, and Great Basin floral areas. This mixed vegetation area extends in E-W line across s. base of Tübatulabal territory. N of it are several different forest belts extending in N-S line; on w. edge of area along Greenhorn mts., is spruce-fir strip; E of this along canyon of unaugmented Kern strip of yellow pine-sugar pine forest; E of this another spruce-fir strip and finally on e. edge of Tübatulabal territory strip of piñon-juniper forest (Shantz and Zon). In extreme n. part of Tübatulabal area, on w. slope of Sierras, is found subalpine forest and, at higher altitudes, alpine communities (Klyver, 8). In terms of Merriam's life zones, using tree indicators of Grinnell and Storer (Grinnell and

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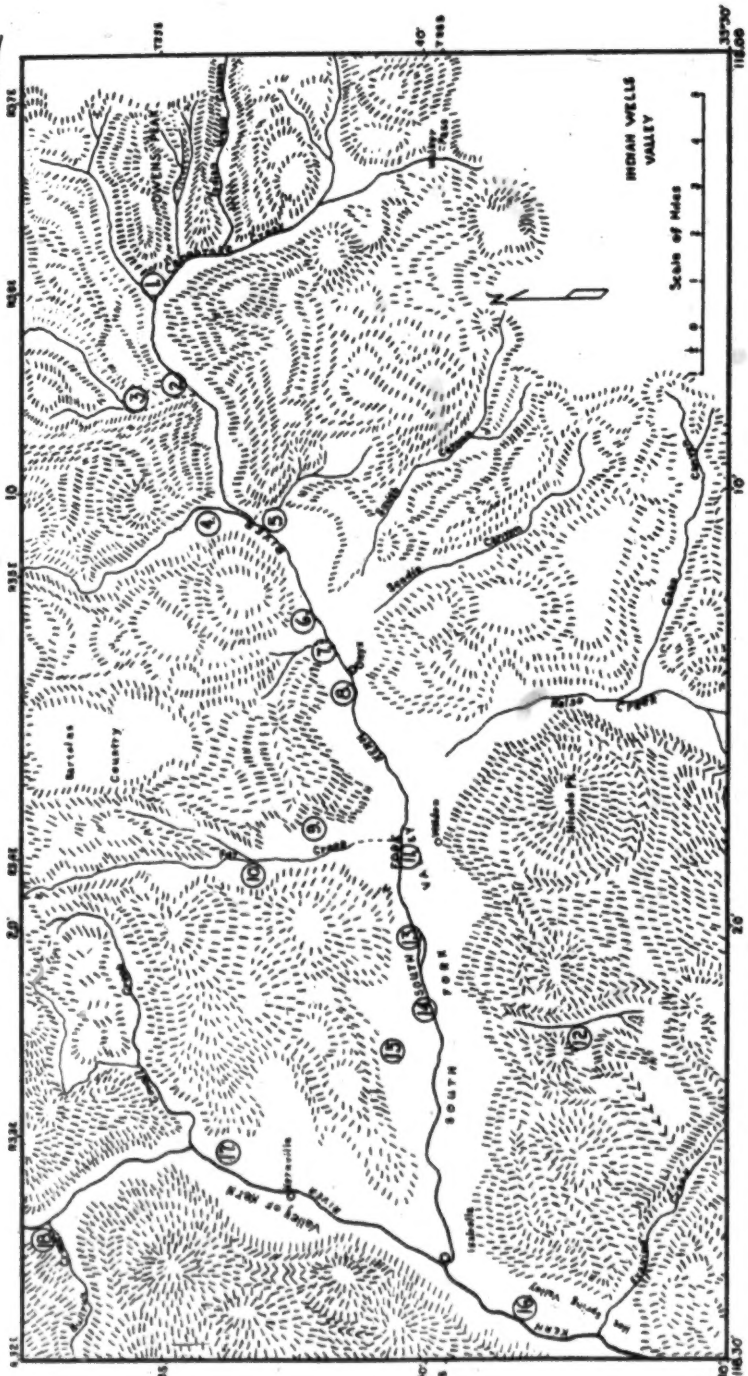

Fig. 11. Map showing three valley regions and Tübatulabal hamlet sites, e. part of Tübatulabal area.

[p.42]

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789 Plate 1. a, Steban Miranda with steatite bowls and pipes used in rain making. b, Frances Philips. c, Estefana Miranda Salazar. d, Mike Miranda.

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342 Plate 2. a, central section of South Fork valley, looking S to Nichols peak and Paiute mts. from Steban Miranda's rancheria, village site no. 9. In foreground sagebrush, Digger pines, scrub oak; in valley beyond, willows and cottonwoods. b, village site no. 9, Steban Miranda's rancheria, looking E. In foreground cottonwoods around springs; on mts. in background Digger pines. c, e. end of South Fork valley, 6 mi. above Onyx, looking NE. In foreground sagebrush, in middle backgroumd tree yuccas, on mt. slopes Digger pines.

249 Plate 3. a, field of wild tobacco, 1/2 mi. E of Weldon, central South Fork valley. b, tobacco plants in field shown above, after third pruning, showing enlarged leaves. Dimensions of envelope at base of plants 3 1/2 x 6 1/2 in. c, samples of tobacco plants taken from patch shown above after final gathering of crop. From left to right, 1, 2, 3, plucked stalks, 1, 16 in. high, 2, 3, 24 in. high; 4, 5, unplucked plants overlooked in final gathering, height 38 in., leaves 6-8 in. long, 2 1/2-3 in. wide; 6, large untended

249 N. bigelovii plant, height 35 in., leaves 4-6 in. long, 1 1/2-2 1/2 in. wide; Z, untended N. attenuata plant, 22 in. high, leaves 2-3 in. long, 1-2 in. broad.

249 Plate 4. a, Estefana Salazar gathering tobacco leaves. b, Frances Philips stripping midribs from tobacco leaves. c, Legora Tungate, Frances Philips, Estefana Salazar with tobacco wrapped in willow bundles ready to be cured.

249 412 415 276 Plate 5. a, cured tobacco drying in sun. b, brush-shaded pit mortar, showing pestles, fiber brush, and basketry tray used when pounding cured tobacco. c, balls and plugs of tobacco drying in sun.

343 301 342 133 773 Plate 6. a, sweat-house pit with remains of sweat house at village site no. 4 (fig. 11). Circumference of pit 37 ft., depth 6 ft. b, necklaces of cylindrical shell beads and colored-glass trade beads. c, ruins of transitional house type of tules and cottonwood at village site no. 7, Onyx rancheria, South Fork valley. d, pa·ša·pan, at base of mts. 3 mi. SW of Onyx and 1/2 mi. E of Kelso creek; showing boulder which Coyote, according to legend, broke in 3 pieces when Bluejay attempted to build bridge across Kelso creek to Nichols peak.

[p. 84 (b)]

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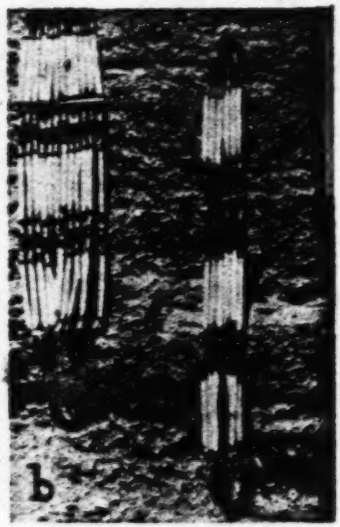

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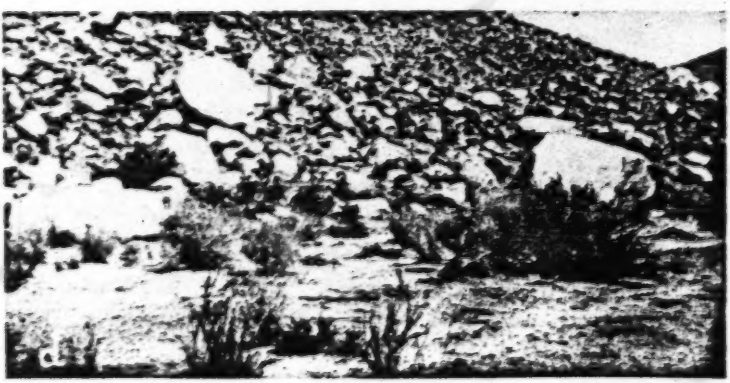

[p. 90]

4: Kroeber E-5 (no date) 1925 NS22 Tübatulabal NS22
Yo Kuts NS29

smaller South Kern. On the map the entire area tributary to both branches has been assigned to the Tübatulabal; but the upper reaches, which are little else than two great canyons among vast mountains, were assuredly uninhabited, and it is not even certain that the Tübatulabal laid exclusive claim to their hunting rights.

Substantially, this Kern River country is a rugged depression between the southern end of the main Sierra Nevada proper and a secondary parallel range. From this lower range to the west, Tule River, and Deer, White, and Poso Creeks flow westward, through Yokuts lands, directly into Tulare Lake. Kern River, however, is confined to a true southerly course until after it has worked its way around the end of the secondary range, when it sweeps westward, and finally almost northward, until lost in the tule swamps and lakes south of Tulare Lake. At least such was the condition until a generation ago: now the lake is nearly gone, and, except in times of flood, the volume of Kern River is dissipated in endless ditches and over irrigated stretches. The natural course of the stream is thus a great semicircle, open to the north: its upper half Tübatulabal, its lower Yokuts. Only at one point did the Tübatulabal leave their river. In the region of upper Deer Creek a small band seems to have had a home among the Yokuts. This group is referred to below as the Bankalachi.

Only a few names of places in Tübatulabal country can be located, and it is not known how many of these were villages. On the South Fork, Cheibü-pan was at Roberts, Tüsh-pan at Weldon. Yahaua-pan was at the forks; Piliwini-pan near Whiskey Flat or Kernville; Wokinapüi-pan farther up the main fork. Mount Whitney, "where all rivers begin," was called Otoavit. Owens Lake, on one side of the mountains, was Patsiwat, Bakersfield, on the other, Paluntanakama-pan.

The Yokuts called the village at the forks Pitnani-u; others, at Kernville, Tulonoya, at Keyes, Haukani-u; and at a hot spring above Vaughn, Tumoyo. The Tübatulabal territory is shown in most detail in the Yokuts map. (Pl. 47.)

The name Tübatulabal is Shoshonean and means "pine-nut eaters," but its dialectic source is not established. The Tübatulabal admit the designation, but also call themselves, or their speech, Pahkanapül. The Yokuts sometimes translate Tübatulabal into Wateknasi, from *watak*, "pine-nut"; but more frequently employ Pitanisha, from Pitnaniu, the central village. They also say Malda, but this term denotes any Shoshonean. Paligawonop and "Polokwynah" are unidentified names for the Tübatulabal.

They, in turn, name their neighbors as follows: Winanghatal, the western Mono of Kaweah River; Yiwinanghal, the eastern Mono or perhaps the Mono in general; Witanghatal, the Kitanemuk Serrano. These three names present the appearance of being directional terms. The Kawishin are the Kawaiisu, the Toloim the Bankalachi, the Amahaba the far-away Mohave. The Yokuts tribes in the valley along lower Kern River are the Mollalabal; for the Yokuts in the foothills, somewhat distorted forms of their proper names are employed, as Witskamin, Paluyam, and Yokol, with perhaps an extension

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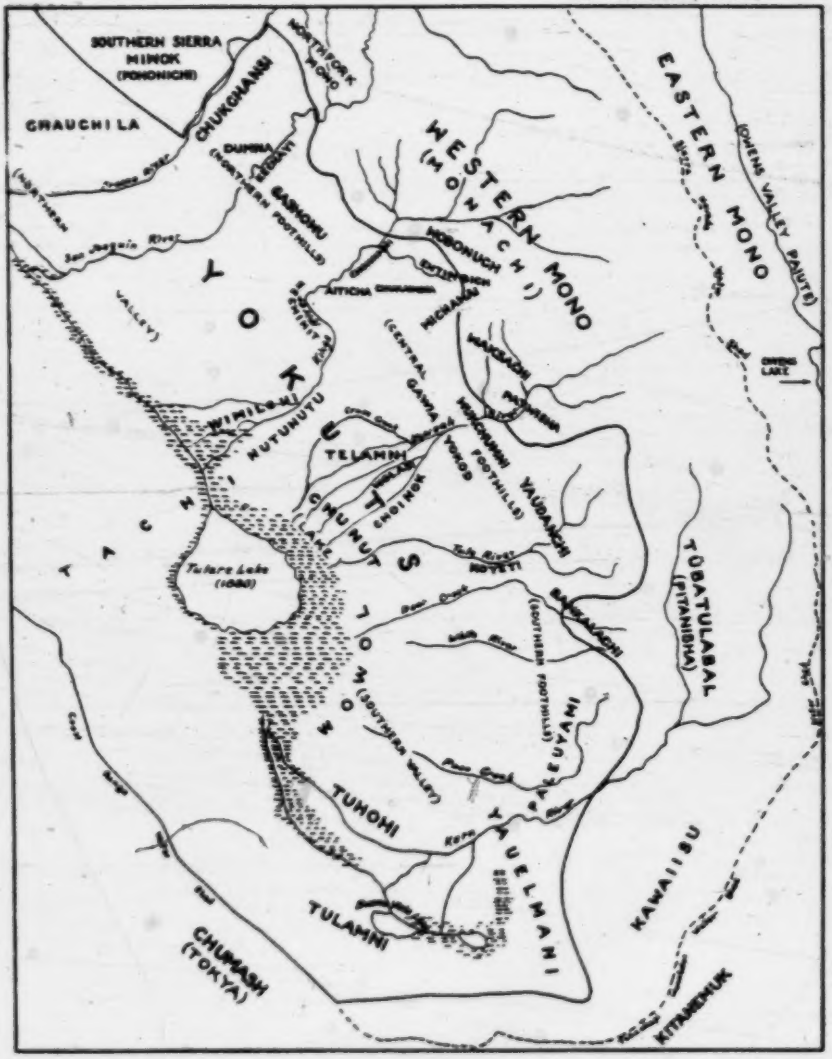
1: Gayton E-5 (1925-1930) 1948 NS29 Yokuts NS29
Western Mono NS25
Tübatulabal NS22

[FACING P. 1]



Map 1. Yokuts and Western Mono tribes (after Kroeber)